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MOON ROCKETS LURE GERMANY'S SAVANTS

Herman Oberth, One of Four Who Are Making Tests, Confident of Ultimate Success.

BACKED BY FILM COMPANY

Inventor Believes Liquid Fuel Will Solve Problem of Reaching Outer Realm of Space.

By GUIDO ENDERIS.

Special Cable to THE NEW YORK TIMES.

BERLIN, Sept. 19.—If Germany fails to "win a place in the moon" ahead of other contenders it will not be the fault of her servants or amateur scientists, for the "space rocket" which is to show us the way to the moon is again in the foreground of German scientific speculation. This time it is Professor Herman Oberth, the Austro-German scientist, who is planning in Berlin a series of experiments with high-powered rockets which are intended to reflect the results of his twenty years of study of the problem and which will be staged at some point on the North Sea or the Baltic seacoasts in the course of the next few weeks.

Fritz von Opel, amateur sportsman and scientist, also is still toying with the problem, while Kurt C. Volkhart and Max Valier, engineers by profession, continue to keep their imaginations whetted with an undiminishing faith in the ultimate triumph of a self-propelling missle which shall penetrate space nd then surely return to earth, possibly with snapshots taken on the fly of some planet encountered en route.

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First Experiments Tentative.

"Of course, I am not yet thinking of flying to the moon," said Herr Oberth. "These initial experiments have a purely scientific character and are primarily intended to demonstrate the usability of a propulsion fluid which I have worked out."

Herr Oberth made the statement in an enthusiastic talk with this correspondent on the scope and purpose of his experiments here. He then proceeded to overwhelm his interrogator with maps, charts, diagrams, Euclidean tables, chemical formulae and much other mystifying data which ruthlessly shattered an earlier faith in the empiric knowledge of one Jules Verne.

Herr Oberth cheerfully admits that for almost fifteen years he was obliged to devote himself to study of the theory of the rocket principle, as he had no money to carry on practical experiments. After studying in Munich, Goettingen and Heidelberg he migrated to Transylvania, which is now his home. He is 36 years old, married, has four children, and served four years in the Austrian army during the World War. His appearance is modest, but when he launches forth on his favorite subject he makes no attempt to conceal his joy at now being able, through the enterprise of a well-known German film concern, to carry out active experiments.

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Tests of Fuel First.

"My first rockets will have the primary purpose of testing the new liquid fuel and of determining to what extent rockets can be constructed so they will be able to manoeuvre and strike out in the desired direction so their course can be followed with powerful lenses," he said. His first rocket intended to penetrate into space will be a "registration rocket," which will not be equipped with any recording instruments but which, he hopes, will attain an altitude of fifty kilometers (about thirty-one miles), or more than 160,000 feet, which is four times as high as the present airplane altitude record. He even hopes to be able to designate the spot at which the rocket will return to earth, although such a computation has only a theoretical value, as it is not yet certain whether a rocket can be touched off so that it will ascend perpendicularly, although it will be equipped with a steering device.

On the other hand, if the rocket lands in the ocean Herr Oberth hopes to recover it. German naval authorities, with whom Herr Oberth is negotiating for a suitable location along the seacoast for the forthcoming trials, object to having the rocket go straight up, as they fear it will land at some interior point and injure some one. The navy men want it touched off at an angle of about 85 degrees.

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Rocket Shot From Mortar.

The rocket releases itself automatically from a mortar and is equipped with a parachute which automatically unfolds when the supply of fuel is exhausted, enabling it to descend gently.

It is on the results of his laboratory combination liquid fuel that Herr Oberth largely bases his hopes of reaching the stratosphere with his missile. He has abandoned the use of powder in favor of liquid oxygen, which he later intends to combine with benzine, alcohol and other energy producing fluid agencies. In this connection Herr Oberth has not yet arrived at a final judgment, although he believes he has hit upon a temporary formula which will materially help clarify the fuel problem.

Running through a chamber in his first trial rocket, which is about ten meters long (roughly thirty-three feet) and ten centimeters in diameter, are four shafts of lightly galvanized carbon which, when brought into contact with the liquid, are gradually consumed, thus generating a gas that is discharged through the head of the rocket at a speed of 1,500 meters a second, forcing the rocket forward.

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Safety Valve Speed Control.

In order to maintain a uniform pressure of thirty atmospheres, the discharge pipes are equipped with safety valves.

When loaded the rocket will weigh about seventy kilograms (154 pounds). To its head are attached a set of fins which permit its regulation in flight.

Herr Oberth admits that it probably will be necessary to construct three or four trial rockets before the

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experiments warrant construction of more pretentious missiles or the fuel problem is definitely settled.

There are three possible causes of failure, Herr Oberth admits, the first being that the carbons might fail to ignite, in which case the rocket would not rise. If, on the other hand, the carbons become saturated with oxygen there is danger of an explosion, whereas if they should be extinguished after a brief time the rocket would only rise to a moderate height.

No present failure would induce him to abandon his project, Herr Oberth declared, reiterating his faith in the ultimate conquest of space. He refuses to be rushed in his present tests and will devote six months to try-outs if early results do not meet his expectations. He even proposes to attach two minor rockets to the main one, which would give it a lift for six or seven kilometers before they detach themselves and it begins moving on its own power.

With the optimism born of the zeal of the inventor, Herr Oberth clings fast to the belief that the not too distant future may see a "long-distance rocket" equipped with an aerial camera enabling it to take snapshots of unknown regions en route. Once this stage of development has been reached, the next phase, the "geographic rocket," would be the obvious step forward, for then it would be possible to determine the rocket's landing place in advance, thus converting it into a mail carrier.

Such a vehicle, Herr Oberth predicts, would drop European mails in New York in thirty minutes. Once these problems are disposed of, Herr Oberth conceives as an ultimate achievement the construction of the "space rocket ship" about forty-two meters (about 136 feet) in length going at a rate of 11.2 kilometers a second. Its load of burned-out rockets would be discharged in flight, so that the "space ship" would be considerably smaller when and if it landed on the moon.

It is this ship that is to carry the heroine of Thea von Harbon's story, "The Girl in the Moon," and as the husband of the authoress happens to be Fritz Lang, the energetic producing manager of OKA, the leading German film concern, which is converting the story into a movie, nothing could be more natural than that Professor Oberth should be asked to conduct his rocket experiments in Germany at UFA's expense.